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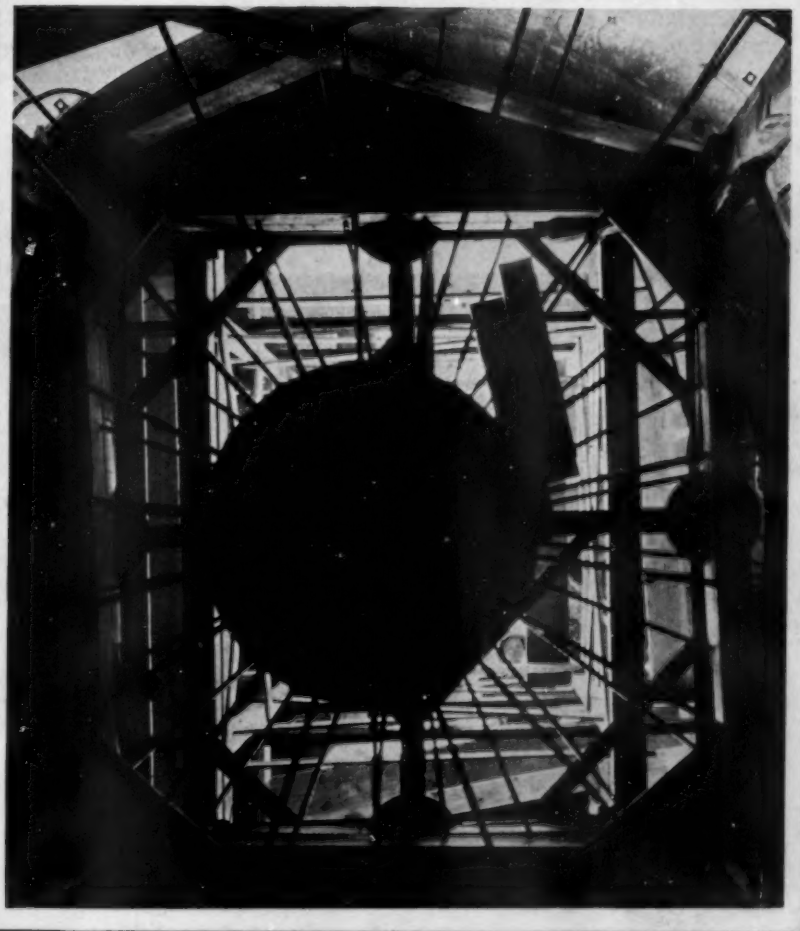
# SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •



November 27, 1937

**Atom Smasher**

See Page 339

A SCIENCE SERVICE PUBLICATION

# SCIENCE NEWS LETTER

*Vol. 32* *No. 868*

The Weekly Summary of Current Science

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*Edited by* WATSON DAVIS

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# DO YOU KNOW?

If furniture is badly arranged, a home may have its traffic problems of narrow lanes and inadequate parking space.

Australia traces its plague of rabbits back to 1860, when some unknown person brought 24 rabbits as pets to a park in Victoria.

In one agricultural experiment, in which a cornfield was left uncultivated and unweeded, its yield proved about 80 per cent. lower.

Television cameras, which can take field pictures and transmit them to headquarters, are being developed for use by airplane observers in war.

In a picture painted in 1665, a Dutch artist portrayed a neat pharmacy in which he plainly labeled jars containing 42 pharmaceutical ingredients.

Dutch bakers are particularly interested in ways of keeping bread fresh by freezing it, because of the restrictions on night work in the Netherlands.

Connecticut is being invaded by death watch beetles—the same pests that once cost England half a million dollars for repairs to the damaged roof of Westminster Abbey.

Smallpox was one of the diseases that plagued the American army during the Revolution.

The mountain goat of the Rocky Mountains is only distantly related to the domestic goat.

Judging by old records, earthquakes have killed over a million Chinese in the past four centuries.

A celluloid substitute invented in Germany is hard to burn, odorless, and noticeably resistant to light, acids, and alkalies.

The larch tree in the North and the cypress in the South are the only native American cone-bearers that drop all of their needles each year.

In Riverside, Illinois, no theater or moving picture house can be built without providing 200 feet of parking space for every six seats in the building.

Using a hypodermic syringe, an entomologist is able to inject extremely tiny doses of poisoned foods into codling moth caterpillars, directly into the digestive tract, and thus he can test more accurately the effectiveness of various poison baits.

## WITH THE SCIENCES THIS WEEK

***Most articles are based on communications to Science Service or papers before meetings, but where published sources are used they are referred to in the article.***

ARCHAEOLOGY

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PSYCHIATRY

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PSYCHOLOGY

Do pyschiatrists believe that arms make for peace? p. 345.

In what ways are drowsy persons like the mentally ill? p. 343.

PUBLIC HEALTH

How much does it cost for serum to treat one pneumonia case? p. 341.

What is the attitude of physicians toward public medical care? p. 340.

CHEMISTRY

# Elusive Element No. 87 Reported Discovered

## Discovery Made in France, Although Not Yet Reported To Science Journals, Is Announced in California

THE DISCOVERY of element No. 87—the last but one of the missing elements in the periodic table—has been achieved in France. The finding of this elusive element, whose discovery has been previously reported and afterward disproved, was made by Horia Hulubei, in France.

The discovery has not yet been reported in scientific journals but was revealed by Dr. F. R. Hirsh, Jr., research fellow at California Institute of Technology, speaking at a seminar of the physics department.

Dr. Hirsch reported that Hulubei's discovery was made as a result of a suggestion of Dr. Jesse W. M. DuMond, research associate at California Institute. In 1930 Dr. DuMond first suggested an apparatus, known as the curved crystal focusing spectrograph, which was modified by the French scientist Cauchois and used by Hulubei in the discovery of element No. 87.

While at Cornell University Dr. Hirsch, one of the 17 or 18 scientists who sought the formerly missing element, reported to the American Physical Society that he was unable to confirm a prior claim by Prof. Jacob Papish and Eugene Wainer, for the discovery of element No. 87.

Dr. Hirsch predicted that the last missing element, No. 85, in the periodic table, might also be discovered by the powerful instrument used in France.

This instrument is so sensitive that it can detect one part of a given element in 10,000,000,000 parts of pollucite or any chemical or mineral. Pollucite is the mineral in which Hulubei discovered element No. 87, which has been named Madavium.

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*ATOM SMASHER*

***This great pear shaped instrument is the new atom smasher now being built by the Carnegie Institution of Washington, in the capital city. Seventy tons of steel are going into its 55-foot high shell. The photograph on the cover of this week's Science News Letter is of the same frame work looking directly upward toward the workmen at the top.***

PHYSICS

## First Estimate of Size Of New Subatomic Particle

THE PHYSICISTS' unchristened baby, the subatomic particle discovered almost exactly a year ago, is between 100 and 160 times as massive as the electron.

This first estimate of the size of the most recent addition to the family of building blocks of the universe was reported (*Physical Review*, Nov. 1) by Drs. J. C. Street and E. C. Stevenson of Harvard University.

One thousand photographs of particle tracks produced by the bombardment of matter by cosmic rays were taken by the Harvard scientists in order to secure one photograph of the new particle, it is stated. The estimate of the size is based on the shape of the track the particle left behind it and on its penetrating power.

First reported by Science Service almost exactly a year ago, discovery of the particle, credited to Dr. Carl D. Anderson, California Institute of Technology Nobel Prize winner, and his associate, Dr. Seth Neddermeyer, occasioned a keen rivalry between the California scientists and their Harvard colleagues. The official announcement of its discovery by the Californians last spring was made almost simultaneously with a similar announcement from Harvard.

The particle is believed to carry the same negative electric charge as an electron, for the two Harvard scientists made that assumption in proceeding to analyze results of their lengthy experiments.

Four Geiger counters—devices for counting atomic discharges—were lined up in an ingenious experimental "telescope" layout in order to track the new particle. The first three counters were

used to guarantee that particles were coming from only one direction outside the apparatus. The last counter served to cut off the observing chamber when high energy particles, photographs of which were not wanted, passed through the counters. Had this last trap not been used 4,000 pictures—instead of 1,000—would have been necessary to obtain the one vital atomic portrait for which Drs. Street and Stevenson were looking.

*Science News Letter, November 27, 1937*

MEDICINE

## Iron and Sugar Checks Cancer Growth in Rats

A COMBINATION of sugar and iron given on top of a red or blue dye has been successful in treating one kind of cancer in rats, it appears from experiments conducted by Drs. Richard M. Brickner and Royal E. Grant of the College of Physicians and Surgeons, Columbia University, and the Neurological Institute. The two scientists state (*Science*, Nov. 12) that the treatment is under discussion not as a cure but as a method of checking the growth of the tumors in the animals.

In 47 out of 64 animals treated so far, the tumor stopped growing, they report. In about half of these animals the tumor receded. In only a few cases, however, did the tumor recede completely.

The sugar and iron combination used is ferric gluconate. Alone, this chemical had some power to check tumor growth. It was much more effective when given after injection of either a red or blue dye. The dye, it is explained, is readily taken up by the tumor cells and seems to "make up a chemical bed in the tumor, by virtue of which the ferric gluconate might either be held in increased quantity or be made more effective in the tumor."

Not only was the growth of the tumors checked, but the tumors themselves, when sections of them were examined under the microscope following the treatment, were found to have undergone "profound and widespread changes." Only occasional normal looking nests of cells were found in the tumors after the iron and sugar and dye treatment.

*Science News Letter, November 27, 1937*

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Arguing for lighted highways, a lighting engineer points out that 60 per cent. of traffic deaths occur at night, when only 20 per cent. of the day's traffic volume is moving.

*SPEEDY TELEPHOTO CAMERA*

***Machine gun sights, an extremely long-focus lens of great speed and a universal tripod mounting feature the new news camera shown here with the inventor, Photographer Charles A. Gatschet of Des Moines, Iowa. Still not satisfied with his equipment, however, Gatschet plans to further improve his camera, so that it can be opened more quickly and operated with less labor.***

PUBLIC HEALTH

# Committee of Physicians Urges Adequate Medical Care

PRINCIPLES and proposals for reorganizing medical practice in accord with changing social and economic conditions so as to bring medical care to the "forgotten man," at present unnursed and undoctored, were presented to medical organizations by a Committee of Physicians in New Haven, Conn.

The committee represents 430 medical men. It includes one Nobel Prize winner and is headed by the following officers: Dr. Russell L. Cecil, Chairman, associate attending physician, New York Hospital; Dr. John P. Peters, Secretary, professor of medicine, Yale University School of Medicine; Dr. Milton C. Winternitz, Vice-chairman, Professor of pathology, formerly dean, Yale University School of Medicine; Dr. Hugh Cabot, Vice-chairman, Consulting surgeon, Mayo Clinic.

The medical profession, although only one of several groups vitally concerned with medical care, should, in the opinion of the committee, take the lead in proposed changes and should cooperate with other interested groups. Medicine must be ready to change and not remain static if "medical men are to act as the expert advisers of those who convert public opinion into action."

Health insurance alone, the committee and its subscribers believe, does not offer a satisfactory solution on the basis of the principles and proposals they have drawn up.

First of the principles indicates the view that the people's health is the direct concern of the government and that a national public health policy should be formulated. Prevention of illness is stressed as the first necessary step toward improving the medical and health picture. Voluntary agencies, local, state and federal governments are all concerned, the committee states, in providing adequate medical care.

Full text of principles and proposals follows:

### Principles

1. That the health of the people is a direct concern of the government.

2. That a national public health policy directed toward all groups of the population should be formulated.

3. That the problem of economic need and the problem of providing adequate medical care are not identical and may require different approaches for their solution.

4. That in the provision of adequate medical care for the population four agencies are concerned: voluntary agencies, local, state and federal governments.

### Proposals

1. That the first necessary step toward realization of the above principles is to minimize the risk of illness by prevention.

2. That an immediate problem is provision of adequate medical care for the medically indigent, the cost to be met from public funds (local and/or state and/or federal).

3. That public funds should be made available for the support of medical education and for studies, investigations and procedures for raising the standards of medical practice. If this is not provided for, the provision of adequate medical care may prove impossible.

4. That public funds should be available for medical research as essential for high standards of practice in both preventive and curative medicine.

5. That public funds should be made available to hospitals that render service to the medically indigent and for laboratory and diagnostic and consultative services.

6. That in allocation of public funds existing private institutions should be utlized to the largest possible extent and that they may receive support so long as their service is in consonance with the above principles.

7. That public health services, federal, state and local, should be extended by evolutionary process.

8. That the investigation and planning of the measures proposed and their ultimate direction should be assigned to experts.

9. That the adequate administration and supervision of the health functions of the government, as implied in the above proposals, necessitates in our opinion a functional consolidation of all federal health and medical activities, preferably under a separate department.

*Science News Letter, November 27, 1937*

PUBLIC HEALTH

# Pneumonia Serum Should Be Available to the Public

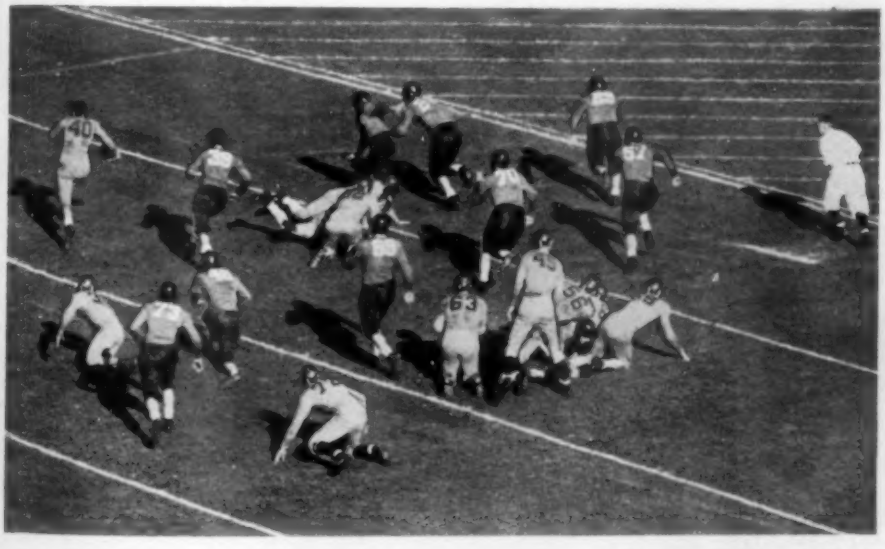
IT IS the duty of the community to help the practicing physician fight pneumonia deaths by seeing that facilities for laboratory diagnosis and serum treatment are available to every patient, whether he can pay for them or not. This is the opinion of nine of the nation's foremost authorities on pneumonia who met as a committee with Surgeon General Thomas Parran at the U. S. Public Health Service to consider how best to cut down the pneumonia death toll.

In planning the conference, Dr. Parran pointed out, the Public Health Service was in close touch with the American Medical Association and received assistance from that organization in assembling data on existing facilities for pneumonia diagnosis. The medical association asked nearly five thousand hospitals throughout the country whether they were equipped to do pneumonia typing for diagnosis by the approved modern rapid method. Just under three thousand hospitals replied and of these 68 per cent. stated they had the typing facilities. In every state, it was found, there are some hospitals equipped to do this typing, which in thousands of cases means the saving of lives threatened by pneumonia.

Serum for treating types one, two, five, seven and eight of the thirty-two known types of lobar pneumonia are known to be effective and can now be obtained. The practicing physician, the committee believes, is well aware of the value of serum treatment but he should be able to get it for his patients even when they cannot afford to buy it themselves. The cost for serum for treating one case of pneumonia is usually estimated at $150.

Serum is not the whole answer to the pneumonia problem, the committee agreed. Good medical care and good nursing care are still important and these also, the committee feels, should be available for every case, regardless of the patient's economic status. The same was said to be true regarding hospital beds for pneumonia patients.

*Science News Letter, November 27, 1937*



*EVERY DETAIL CLEAR*

***This picture made by Photographer Charles A. Gatschet of Des Moines, Iowa, from a point 500 feet away as a back (No. 40) heads into the clear on a touchdown spurt. He used the "howitzer" camera he has developed to secure this photograph. Details less than an inch across show up clearly.***

ASTRONOMY

# Another Eclipse

## This Time of the Sun, It Will Be Visible Along a Belt Across Pacific; Width of Ring Almost Maximum

By JAMES STOKLEY

IN DECEMBER, and for the second time this year, an eclipse of the sun will be visible along a belt crossing the Pacific Ocean. But this one is being very differently received by astronomers. The first one, on June 8, made many astronomers travel great distances to the points where it would be seen. The writer, for example, made a special trip to Honolulu, then voyaged for an entire month on a ten-knot freighter en route from that city to New York, in order to be close to the point in mid-ocean where the eclipse would have been seen to best advantage. This was a journey of some 13,000 miles for an observation lasting just over seven minutes.

The area where the new eclipse, on December 2, may be seen covers practically the same part of the world. Yet no astronomers have betrayed the slightest interest in going to look at it. The reason is that the June eclipse was total —then the moon completely covered the sun. Its bright disc hidden, the sun's corona flashed into view. Many other observations, possible only at eclipse time, were made by the various expeditions.

This month's eclipse is of the type called "annular." That is, the moon goes directly between the earth and sun, but fails completely to cover it. Thus, there is a ring of the sun's bright disc in view around the dark circle of the moon, and this light is enough to prevent the usual eclipse observations. Should an astronomer happen to be in the path, he would undoubtedly look, but it has little scientific importance to warrant his journeying to be there.

### South of Japan

The region in which the ring of sunlight will appear around the moon is a belt, about 225 miles wide, starting some 700 miles south of Japan. The belt passes southeastward, crossing the northernmost of the Marshall Islands, then Palmyra Island, Washington Island, and Fanning Island, three small bits of land about a thousand miles south of Hawaii. The path is then northeastward, to a location a few hundred miles west of lower California.

This eclipse has one peculiarity, which it shares with the one of June—it starts the day after it ends! Many eclipses do this, all in which the path of visibility crosses the meridian marking 180 degrees of longitude. This is the International Date Line, where the new date begins. When it is Monday to the west of this line, it is still Sunday just to its east. Where the eclipse begins, the sun is just rising, on Friday, December 3, but as soon as it crosses the Date Line, it is Thursday, December 2. At Washington Island, for example, the center of the eclipse will come about noon on this date. At the point of ending it is sunset on Thursday. All this time, however, it is Thursday in the United States. By eastern standard time, the eclipse begins at 3:05 p. m. and ends at 9:05 p. m.

### Partial Eclipse

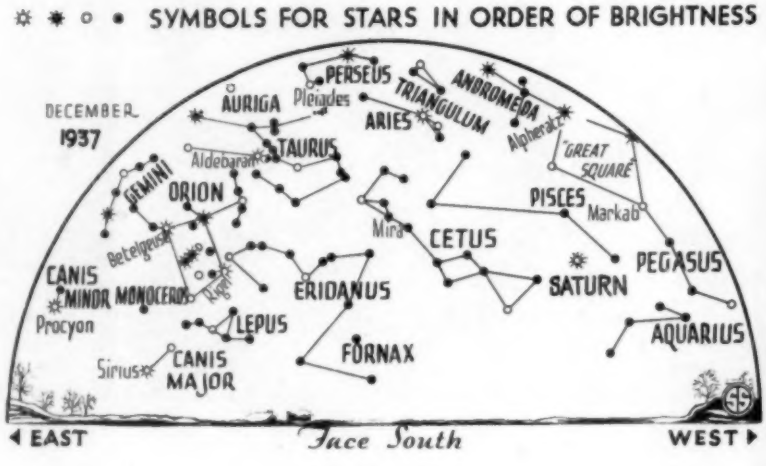
Over practically the entire northern, and a large part of the southern, Pacific Ocean there will be a partial eclipse, with the disc of the moon only partly covering the sun. In the Hawaiian Islands a large partial eclipse will be seen in the middle of the day. Along the west coast of Mexico, the United States and Canada, as well as part of Alaska, the sun will set while partially eclipsed. In Kamchatka, Japan and the Philippines, the sun will be partly eclipsed when it rises.

A comparison of this eclipse with the one in June reveals the contrast between the two types of eclipses, a contrast which is unusually great in the case of these two. The sun is about 400 times the diameter of the moon, but is also about 400 times as distant, so the two seem about the same size as we see them in the sky. The distance of each one varies, and so does their apparent size. With an average distance of 92,870,000 miles, the sun came as close to the earth as 91,337,700 miles on January 1.

### Nearing Minimum

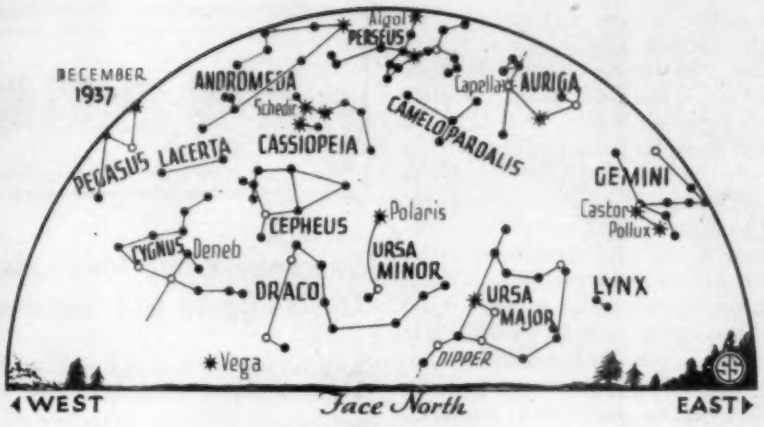
On July 4 it had receded to 94,454,200 miles, and now it is again nearing the minimum. The moon also varies. Its average is about 232,000 miles, but it can come as close as 217,750 miles to the earth's surface, or recede as far as 248,500 miles from the surface. These variations produce the change in their apparent diameters in the sky.

The eclipse in June came less than a month before the sun was farthest, and hence smallest. It happened also to come less than a day after the moon was closest for that month. This meant that the excess in size of the moon was almost at its greatest possible figure, and so it took longer to pass across the sun than in any eclipse for many centuries, lasting 7 min-




*WINTER STARS*

***Their glory makes up for lack of bright planets.***




ROYAL MOTHER

***High in the northwest is Andromeda's mother, the queen Cassiopeia, a familiar landmark.***

tes 4 seconds. This month conditions are almost the reverse. The moon is at apogee, or farthest from earth, less than a day after the eclipse, and the sun in about a month will be at its least distance. Thus the moon now is considerably smaller in relation to the sun, and the width of the ring seen around it is almost as great as it can be.

Though but one planet appears on the accompanying maps of the December evening skies (which show them for 10:00 p. m., Dec. 1; 9:00 p m. on the 15th and 8:00 p. m. on the 31st), two others can be glimpsed. Soon after sunset Jupiter can be seen low in the southwest. Farther east, and fainter, is the red planet Mars, but both have set by the times for which the maps are drawn. Saturn, however, is visible as shown, in the constellation of Pisces, the fishes, to the southwest.

But the winter constellations make up in glory for what the December skies may now lack in planets. These constellations are visible to the east and southeast. First comes Orion, the great warrior. The three stars in a row, supposed to represent his belt, make him easy to locate. Above and to the left is Betelgeuse, marking one of his shoulders, and on the opposite side of the belt is Rigel, in one leg.

### Taurus

Above Orion is Taurus, the bull. A V-shaped group of stars, the Hyades, outline his face. Most of these are rather faint, but there is one very brilliant orb, red in color. Aldebaran it is, in the eye of the bull. High in the east is the constellation of Auriga, the charioteer, in which Capella shines. Below are Gemini, the twins, with Castor and Pollux, the latter the more brilliant.

But brightest of all stars, in fact the brightest ever seen (except, of course, the sun) is Sirius, low in the southeast, below Orion. It is in Canis Major, the great dog, one of the two dogs following the warrior Orion across the sky. The other dog, Canis Minor, is above and to the left, and contains Procyon.

Two other first magnitude stars are shown on the maps, low in the northwest, where they are vanishing from the evening skies after being conspicuous during the autumn months. Vega is near the horizon, and forms part of Lyra, the lyre. Above Vega is Cygnus, the swan, or the northern cross, as it is sometimes called. Deneb is the bright star marking the top of the cross.

### Pegasus

Among the other groups that are conspicuous, though containing no stars as bright as first magnitude, is Pegasus, the winged horse, high in the west. In this is the "great square," the upper star of which is in Andromeda, the princess who was chained to the rock, according to the mythological account. Beyond her, almost directly overhead, is Perseus, the champion who rescued her. Cetus, the sea monster who tried to devour her, is conspicuous in the south.

In the north, the great dipper, part of Ursa Major, the great bear, is swinging up into the northeast with the pointers, now in the top of the dipper, indicating the direction of Polaris, the pole star. High in the northwest is Cassiopeia, the queen, Andromeda's mother.

The sun's annual motion around the sky, actually the effect of the earth's motion around the sun, brings it on December 22, at 1:22 a. m. eastern standard time, to its farthest south position, when it is directly over the tropic of Capricorn. This is the winter solstice; the beginning of winter, in the northern hemisphere. Also, for us, it marks the shortest day of the year.

Below are given the moon's phases for the month. Its changes in distance have been referred to above. On December 3 it is in apogee, at 12:00 noon, eastern standard time, with a distance, between centers, of 252,600 miles. On December 17 it will be closest, at perigee, 226,800 miles distant. December 30 will bring the second apogee of the month, at 1:00 p. m. with 252,500 miles.

**Phases of the Moon**

| | | E. S. T. |
|---|---|---|
| New | Dec. 2 | 6:11 p. m. |
| First Quarter | Dec. 10 | 8:12 p. m. |
| Full | Dec. 17 | 1:52 p. m. |
| Last Quarter | Dec. 24 | 9:20 a. m. |

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PSYCHOLOGY

## Persons Falling Asleep Give Clues to Mental Ills

DIFFERENT parts of the brain apparently go to sleep separately and to different degrees, Drs. H. Davis and P. A. Davis of Harvard Medical School and Drs. A. L. Loomis, E. N. Harvey and G. Hobart of the Loomis Laboratory at Tuxedo, N. Y., have found in brain wave studies (*Science*, Nov. 12). Their studies also suggest that clues to the cause of many mental diseases or abnormalities may be found in studies of the normal falling asleep process.

Four kinds of brain waves or electrical patterns appear during the going to sleep process, they found. First there is the state when the person is at rest but awake. Next follow different kinds of waves in the drowsy, "floating" state. A second intermediate state is characterized by a still different brain wave pattern and this merges into the fourth pattern found in real sleep.

Of practical importance, they point out, is the fact that the patterns of early sleep in normal persons are strikingly like those seen in some mentally sick or otherwise abnormal persons. Scientists making brain wave studies should not be misled by the pattern of an unsuspected dozing or "floating" state into diagnosing a state of mental abnormality.

This similarity suggests that many abnormal mental conditions may depend on general modifications of brain function which are fundamentally like those of normal sleep. The scientists are now investigating this possibility.

*Science News Letter, November 27, 1937*

ENGINEERING

## Television Apparatus Patented by Bell Engineer

PATENT No. 2,099,115 was granted to Dr. Herbert E. Ives, director of electro-optical research for the Bell Telephone Laboratories, on scanning apparatus and terminal equipment for two-way television over a telephone cable.

Featuring means for keeping each party in such a position that he can see the person with whom he is speaking and at the same time be scanned so that his image is transmitted to the party at the other end of the line, the apparatus is intended primarily for "televising" telephone users.

Dr. Ives, ranked as one of the foremost research workers in the television field, only recently superintended a successful television demonstration by means of the coaxial cable, a cable which can carry at the same time more than ten score telephone conversations or nearly three thousand telegraphic communications or one 240-line television transmission.

*Science News Letter, November 27, 1937*

ARCHAEOLOGY

## Credits Indians With Great Skill In Metals

ONE prehistoric people mastered the difficult metal, platinum, and they were Indians of northern Ecuador. They were part of the great golden Incan Empire, although last to be absorbed into the vast Indian political machine before Spanish Conquest ended its amazing progress.

These ancients of Ecuador made platinum jewelry. Apparently, they were the only ones to use this metal ornamentally until recent times. They made rings and tools of it, but mostly they plated gold with it to form dangling, shiny platelets, to catch the light.

The extraordinary point, though, is that they could blend the soft platinum with other metal to make a harder alloy. It took our civilization about a century to master that problem. We force the platinum to melt by intense heat, only possible with modern technical appliances.

That Indians actually achieved a platinum alloy is discovered by Dr. Paul Bergsoe, vice president of the Danish Association for Metallurgical Research. He found a clue in some half-finished work, abandoned over 400 years ago. He declares it compels modern science to have new respect for Indian metallurgy.

The Indian method was to mix platinum grains with gold dust and heat it until the gold ran and plated the platinum grains. Then they heated it further by blowpipe until gold and platinum mingled enough to form a pasty mass that could be hammered when hot. So, by alternately forging and heating they contrived an alloy—not up to modern ones, but good enough for modern metallurgists to think it pure platinum. Chemical analysis revealed the artificial blend.

The Indians apparently took their secret to the grave. Had treasure-hunting Spaniards observed the technique, says Dr. Bergsoe, the story of platinum in Europe might have taken a different turn.

*Science News Letter, November 27, 1937*

MECHANICS

## Old Model T Engine Made Into Air Compressor

NEED an air compressor for your home garage tinkering work, or for scientific experiments?

Got an old auto engine lying around somewhere?

You can make your compressor out of that.

Three young scientists at the University of Iowa—Drs. H. W. Beams, A. T. Casteel, and R. L. King—made one out of an old Model T Ford engine, that works first-rate. It can build up 100 pounds per square inch in a minute in a thirty-gallon tank, and deliver twelve cubic feet a minute at 80 to 90 pounds, indefinitely. A five-horsepower electric motor, belted to a pulley on the crankshaft, does the work.

They partially filled the combustion chambers with babbit metal, put the exhaust valves out of commission, used the intake valves with weakened springs as intakes for the compressor, and led off their compressed air through short pipes screwed into the sparkplug holes.

The details of the conversion from junk engine into air compressor are given briefly in *Science* for Nov. 5.

*Science News Letter, November 27, 1937*

ASTRONOMY

## New Star in Sagittarius Found in Photographs

A NEW star or nova in Sagittarius that in May 1936 rose to 10.8 magnitude after much fainter obscurity has been found on Harvard Observatory photographic plates by Mrs. Margaret Mayall.

*Science News Letter, November 27, 1937*

# IN SCIEN

ARCHAEOLOGY

## Suwanee River May Owe Its Name to the Shawnees

MAYBE we should sing "Way down upon the Shawnee River," if the famous old Suwanee River got its name from those gypsy-Indians, the Shawnee.

Pointing out that there are two theories explaining the Suwanee River's name, neither proved, Dr. John R. Swanton, of the Bureau of American Ethnology, says that Shawnee Indians were gypsies of the Indian race. While other eastern Indians stayed home, or at least within familiar boundaries as a rule, Shawnee groups roamed the map, leaving traces of their presence from New Jersey to Texas. Creek Indians in Georgia twisted their name into Sawanogi.

Dr. Swanton says there is one missing link, needed to prove Indian origin for the name Suwanee. So far, no evidence has shown the Shawnees roaming as far south as the Okefinokee swamp in southern Georgia, where the Suwanee rises, though they may well have been there. They are known to have been as far south as the Chattahoochie River, near Atlanta.

The other theory of the river's name, which is more widely accepted, is that it is a shortened form of a Spanish name given the river, San Juanito, or Little St. John.

*Science News Letter, November 27, 1937*

PALEONTOLOGY

## College Student Unearths Many Ice Age Fossils

FOSSILIZED bones of Ice Age animals have been unearthed in large numbers by Hugh M. Rutledge, 21-year-old student at Presbyterian College, Clinton, S. C., conducting excavations at Edisto Beach State Park, S. C., the U. S. National Park Service has announced. Among the 1,582 pieces of fossilized bone were represented fragments of royal bison, giant armadillo, tapir, giant beaver, extinct horse, mastodon, mammoth, giant sloth, whale, and sea cow.

*Science News Letter, November 27, 1937*

# ...E FIELDS

PSYCHIATRY

## Scientific Study Hope For Reducing Mental Ills

MENTAL health is needed more now than ever before, Dr. Arthur H. Ruggles, president of the National Committee for Mental Hygiene, told the annual meeting of the Committee.

"In a world disturbed by political and economic uncertainties," he said, "we need clearer thinking, less emotionalism and more intelligent cooperation—in a word, better human relationships."

Mental hospitals should spend more money on research toward conquering mental disease, Dr. Ruggles said.

"Canvasses have shown that most states spend less than one per cent. of their mental hospital budget on research. This is very short-sighted policy, because in research lies our greatest hope for the reduction and control of mental disorders."

Financed by funds from the Supreme Council, 33 degree, Scottish Rite Masons, the National Committee for Mental Hygiene has organized research on the mental disease dementia praecox now being studied in leading hospitals and universities. Use of insulin shock and drugs which produce convulsions as possible methods for curing this very prevalent disease are being explored, Dr. Ruggles reported.

*Science News Letter, November 27, 1937*

PSYCHOLOGY

## Most Dangerous of Men Are Controlled Without Guns

ARMING to protect peace. A great deal is being said these days in favor of the "psychological" effect of large armaments in discouraging war. The strong man is not called upon to test his strength, it is said.

Those who study human minds and human behavior do not agree.

In Washington, D. C., in an institution, is a group of men who are probably the most dangerous individuals that other men have ever had to keep in custody. More violent than the worst group of ordinary criminals. More menacing than any other group of madmen. Completely unpredictable. These are the men in the criminal insane ward at St. Elizabeth's Hospital.

It is interesting to see how the suicidal and homicidal manias of these men are controlled. Seldom indeed does one ever escape. Very rarely does a suicide take place. Never is a guard killed.

Perhaps you would expect to see strait-jackets and confining sheets in use to restrain the patients. These are never used at St. Elizabeth's.

Most likely you would expect to find the attendants armed with guns and clubs. Both are strictly forbidden.

I asked Dr. John E. Lind, who is in charge of the criminal insane patients, whether he considered that such a rule endangered the lives of the physicians and attendants. He denied it.

The rule protects the attendants as well as the patients. No greater hazard could be introduced in a ward for criminal insane than that of a loaded gun. Wherever there is a gun, there is always the danger that it will be fired, he said. And once the gun is fired, pandemonium may result.

To protect the peace among the most dangerous of humans, the guns are strictly barred.

*Science News Letter, November 27, 1937*

PUBLIC HEALTH

## Death Rate Lower in 1937 In Spite of Influenza

A LOWER death rate for the entire nation during the first half of 1937 than during the corresponding period of 1936 is reported by the U. S. Public Health Service. Not even an influenza epidemic during the first three months of this year could check the falling death rate, although the death rate would have been even lower if it had not been for that epidemic. The death rate for the second quarter of the year was lower than it had been at that period for the past three years.

Cancer was the only disease among the important causes of death that showed a rise. Particularly gratifying is the decrease in maternal deaths. The maternal mortality was 13 per cent less than that for the corresponding period last year. Tuberculosis mortality was lower for the first six months of the year than for the same period in any of the three preceding years.

The birth rate and the infant mortality rate showed no change from the 1936 rate.

*Science News Letter, November 27, 1937*

METEOROLOGY

## Lightning May Be Slow And Minus Thunder

NEXT time you say "quick as greased lightning," you'd better qualify that word "lightning" with "quick lightning."

For K. B. McEachron, General Electric engineer, reports that he has found "slow" lightning that produces no thunder when its leisurely bolts traverse the sky.

"Our studies," he reports, "have revealed that in some cases the electrical current is built up and released slowly; that is, in one or two tenths of a second as compared to millionths of a second in other discharges.

"This so-called slow lightning produces no thunder. To the human eye it looks the same, and during a general storm the fact that one has heard no thunder in connection with any given stroke is generally overlooked."

Thunder is the result of a pressure wave caused by the sudden expansion of air created by a quick lightning discharge.

*Science News Letter, November 27, 1937*

CLIMATOLOGY

## Past Climatic Changes Shown By Pollen in Bogs

WARMING climate after the recession of the most recent glacial ice, a cooler period, and a more recent warming are shown by evidence collected by Drs. Harry V. Truman and Henry P. Hansen, students of ancient pollens, who have independently studied pollens found in the bogs of Wisconsin.

Dr. Truman, Beloit College ecologist, finds that during an early period in the existence of bogs in his area grasses and pine trees gave evidence of a cool dry period, probably immediately following the ice retreat. Later, a warmer period caused the displacement of trees by grasses, and still later, a cooler climate made conditions favorable for maple trees.

Dr. Hansen, University of Wyoming investigator, studying other bogs, finds evidence suggesting that boreal (cold climate) plant types declined shortly after the ice melted away, then a few of them returned after a period of many years. The findings of these two workers agree quite closely with those of other workers, who, using entirely different methods of approach, have also found evidence of similar postglacial climatic changes.

*Science News Letter, November 27, 1937*

MENTAL HYGIENE

# Night Club Patrons Cry "Criminal" at "Peeping Toms"

## Conflicting Attitudes Toward Sex Complicates Matter Of Sex Crimes; Certain Types Require Medical Care

"IS THERE such a thing as a sex criminal?" Dr. Karl M. Bowman, Bellevue Hospital psychiatrist, put this question to the Mental Hygiene Conference in New York City.

"'Peeping Toms' are looked upon as terrible sex criminals," he said, "yet many of those who are so upset at such types of sex criminals will go to night clubs and spend large sums of money to see nude women dancing about in a very suggestive fashion. These same persons would become very excited, however, if some individual happens to be caught peering through a window while a girl is undressing."

This contradiction and many others in our attitudes toward sex make the problem of sex behavior extremely difficult and complicated, Dr. Bowman told the symposium on "The Challenge of Sex Offenders" under the auspices of the National Committee for Mental Hygiene.

Concerning birth control, one religious group believes that a marriage in which birth control is practiced is abnormal and perverse—other groups hold it to be normal and natural, Dr. Bowman said.

In Massachusetts, a birth control clinic, staffed by reputable physicians, has been giving advice to married women. The lower court has found these doctors guilty of law violation. They will be regarded by some as sex criminals; by others they will be regarded as martyrs.

Reformatories for girls hold a large number of sex offenders. In similar institutions for boys, the number of sex delinquents is nothing like so high. This is not because the girls behave differently from their brothers, but because the girls are considered as criminals while the boys are merely thought to be "sowing wild oats."

It is known that severe punishment and frightening of small children for sex behavior is likely to do more harm than good. The child becomes distrustful of everyone, and may even bring imaginary accusations against an innocent person. Every psychiatrist is familiar with this situation. Yet probably no jury would ever accept the word of a man accused of sex misbehavior against the word of a small child.

Ideas about what constitutes sex crime vary greatly where the standards of civilization are different, but still there are some definite types which the psychiatrist is able, usually, to pick out and from whom the public requires protection, Dr. Bowman said.

Some men, when they become senile, become roused sexually by small children upon whom they make sex assaults.

Sleeping sickness may lead to an alteration of personality in which the sex drive is increased and control lessened.

Epileptics may have clouded spells in which they may attack another person, sometimes in a sexual fashion.

Organic brain diseases such as general paresis may lead to sex abnormalities.

Feebleminded individuals are lacking in self-control although they are not more likely to be abnormal sexually than persons of normal or superior intelligence.

Neurotic persons may also cause trouble because they feel driven to hide or compensate for a natural weakness in aggressive acts.

### Legal Traditions Impede

America's laws themselves stand in the way of proper handling of sex criminals.

The whole legal tradition of America is to "Let the punishment fit the crime." This prevents the courts from dealing with the individual instead of the crime. It ties their hands if they wish to keep the potential criminal from perpetrating attacks on innocent and helpless persons.

The fault is not entirely with the laws, but with the attitudes of the public who have been brought up in the tradition of punishments balanced against the magnitude of the crime, it was emphasized by Dr. Winfred Overholser, Superintendent of St. Elizabeth's Hospital for mental diseases, Washing-


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*WILD TURKEY*

*From Audubon's "Birds of America." See Page 352 for review.*

ton, D. C. Only recently have people recognized the need for studying the individual and varying the sentence to fit extenuating or aggravating circumstances. Even now, if a man takes your money and it happens that you have less than $50 that is called petty larceny and he is guilty of misdemeanor. If you have $51, although his intent is exactly the same, the crime is grand larceny and the sentence is entirely different.

### Laws Forgotten

The courts do not use the machinery they already have for examining the mental condition of those who come before them for judgment, Dr. Overholser charged. In Massachusetts, where the law provides that the judge may ask for mental examination in any case before pronouncing sentence, in only about 35 cases per year has such an examination been made. If it were not for the Briggs Law there, under which certain classes of offenders are automatically referred for examination, it is likely that relatively few would be examined by psychiatrists. The Briggs Law is eminently successful, and should be copied wherever possible, he said.

It should be possible, and in many places it already is possible, for any judge before passing sentence on a convicted man to obtain the advice of psychiatrists regarding the treatment necessary before that man is fit to return to society. So far the New York City Court of General Sessions is probably the only court in which all convicted felons are referred to the clinic.

Not all sex criminals are mentally abnormal, Dr. Overholser emphasized. But no sex crime is trivial from a psychiatric viewpoint. The man who is sentenced five dollars as a "masher" today is one who may be guilty of assault or murder tomorrow. Any person guilty of a sex attack on a little child or a sex attack with violence is a potential murderer and should be handled accordingly, he warned.

### No Menace

The seriousness of the present "wave" of sex crimes was discounted by these experts who have been dealing with the problem over a period of years.

"Civilization is not being menaced," Dr. Edward A. Strecker of the University of Pennsylvania reassured the meeting. "It is doubtful that there is an actual increase in the number of these sex offenses. Indeed, it seems likely that at certain times in history, they were more prevalent.

"There is no place for sickly sentimentality in dealing with this problem. But the line of demarcation between normal and abnormal sexual manifestations is often quite faint and abnormal sexuality has its representation in miniature in nomal sex life.

"It is the duty of the law to protect the public. It must continue to do that.

"But over and above this there should be an effort in the direction of better understanding. Prejudice and intolerance should not be permitted to becloud constructive judgment."

The practical problem of what to do with those offenders for whom the safety of the public demands confinement, was discussed. Psychiatrists agree that medical science can do little to relieve the condition of the true sex pervert. They do not want to be cured, and the physician can do little to aid the man who wants to be ill.

If sex offenders are placed in prison along with other criminals they magnify the problems of the administrator of such institutions where sex problems are already causing difficulty, it was pointed out by the Hon. Austin H. MacCormick, Commissioner of Correction of New York City.

*Science News Letter, November 27, 1937*

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The Metropolitan Museum in New York has a remarkable statue of an Etruscan war god, standing eight feet tall, in fighting pose.

***"I am happy to commend this book."—DONALD CULROSS PEATTIE***

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BOTANY

## NATURE RAMBLINGS
*by Frank Thone*

### Life Forms

BOTANY is not simply a matter of looking at plants and naming them with long Latin names, as is sometimes imagined. A great deal of very interesting plant study can be carried out, not only by the professional but by anybody, on walks in the woods of late autumn and winter, just by sizing up the way the various types in the vegetation meet the problem of keeping their tender growing points alive during the unfavorable season and ready to start new growth when spring comes again.

Key to these fascinating possibilities is given in a book by a noted Danish botanist, Dr. C. Raunkiaer, called Plant Life Forms. It has been newly translated into English by H. Gilbert-Carter and is published by the Oxford University Press.

Dr. Raunkiaer divides all plants into five great general classes, according to the extent to which their overwintering buds are exposed to the weather, or protected from it.

Most exposed, of course, are the buds on trees, bushes, and woody vines, which are high in the air where they get no protection at all except what comes from their own cover of scales. Next are buds on lower-growing plants, a few inches above ground level, where they are commonly covered with snow.

The third class, comprising plants with overwintering buds just at the ground level or barely beneath it, is very important in our temparate-zone vegetation, both wild and cultivated. This class includes all perennial pasture grasses, all winter grains, and such low-growing plants as strawberries and dandelions.

The fourth class winter their growing points entirely underground, like potatoes, asparagus, and tulips, or under the equally safe protection of water, like waterlilies and arrowleaf. The final class consists of plants that die when winter comes and trust the hopes of their species to seeds—the "annuals" of ordinary gardening.

It is a lot of fun to check the plants you see during a walk, according to their life forms, whether you know their specific names or not.

*Science News Letter, November 27, 1937*

GEOPHYSICS

# Earth's Magnetism Charted By Explorers Near Pole

## Daily Dispatches Relayed by Amateur Radio Operators And Included in Science Service's Broadcast Ursigram

FROM near the magnetic north pole, scientists in Washington are receiving daily radioed news of the variations in the earth's magnetism as observed by a little band of ice-locked explorers, the MacGregor Arctic Expedition.

These scientific dispatches are picked up each day by radio amateurs who cooperate as a hobby. They are relayed to the Carnegie Institution of Washington's Department of Terrestrial Magnetism, where experts decode them and compare them with similar observations elsewhere. Science Service makes this news from the Arctic available to scientists at observatories and institutions throughout the world by including it in "cosmic data" messages distributed by both radio and mail.

Wintering far within the Arctic Circle, beyond even "the land of little sticks," in the icy reaches, the MacGregor expedition members, using Carnegie Institution instruments, make continuous observations of the changes in earth magnetism, and are probing the secrets of the aurora or northern lights.

So sensitive are the instruments used by the expedition that they must be kept in special cabins. One is built of brass and insulating board, with no iron parts; another is insulated with a four-inch layer of balsam wool to keep the temperature constant. These cabins, supplied by the Carnegie Institution, together with the instruments, were shipped unassembled to the Arctic, and erected there in the frozen wastes.

Northern lights are studied hourly, and the heights of the polar pyrotechnics are determined by taking simultaneous photographs from two cabins fifteen miles apart. Special short-wave radio equipment is used in signalling between the cabins.

From these studies, Carnegie Institution scientists hope to determine more accurately the relations of magnetic phenomena, northern lights, and sunspots.

The radio messages from the Arctic are picked up by members of the American Radio Relay League, the far-flung amateur radio organization. The "hams" spend long hours at their sets providing the necessary communication between the observers in the Arctic and the scientists in Washington.

*Science News Letter, November 27, 1937*

EVOLUTION

## New View of Evolution By British Scientist

EVOLUTION by internal urges of various organs, as determined by the animal's use or disuse of them, is put forth in place of the Darwinian idea of natural selection and the Mendelian concept of genes or hereditary units, by Prof. W. P. Pycraft, English zoologist, in the annual report of the Smithsonian Institution.

Prof. Pycraft's theory is that the body molds itself by diverting food, and hence growth, to those organs which are most stimulated in its ordinary activities. Consequently these organs are more developed than those which are less stimulated.

*Science News Letter, November 27, 1937*

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**Says Sir Wilfred Grenfell, K. C. M. G., Kinloch House, Charlotte, Vermont: *"Your weekly publication is of the greatest interest to me and to the others to whom I have been forwarding my copies of the* SCIENCE NEWS LETTER, *after having read them."* With his letter containing this statement he enclosed remittance for four annual subscriptions to be sent in his behalf as Christmas gifts.**

METALLURGY

## Molecular Studies of Iron Bring New Types of Steel

AMERICAN industry is entering a new era in the manufacture and use of "tailor-made" steels adapted to a wide variety of purposes and made possible by scientists studying iron molecule by molecule, the Franklin Institute was told by Dr. John Johnston, director of research for the United States Steel Corporation.

Control of the heating and cooling of iron and steel during its manufacture so as to change the point at which iron changes from its "alpha" form to its "gamma" phase is making possible new types of material that can be fitted to new needs, he asserted.

"A generation ago," he stated, "the technical problems facing the steel industry were related mainly to increased production of a few kinds of steel, but today the object is to improve the fitness of steel at no greater over-all cost to the public."

Iron is now known to exist in two forms, the alpha and gamma types, he explained. These two types, which differ in physical properties sufficiently to enable engineers to adapt them to practical use, owe their existence to different arrangements of iron atoms in the iron molecule. And the change from one type to the other can be controlled by the processing which the iron receives.

The emphasis in the iron and steel business today is on producing corrosion-proof metals, he explained. Stainless steel, most prominent member of the corrosion-resistant family, is valuable among other things, because it does not rust and thin sheets can be used without the fear that they will be damaged by long exposure.

*Science News Letter, November 27, 1937*

A human being has 20 bones in his skull; a codfish has 68.

## ●RADIO

***December 2, 4:15 p. m., E.S.T.***

**KEEP WELL AT CHRISTMAS—Dr. John A. Skladowsky of the Baltimore Health Department.**

***December 9, 4:15 p. m., E.S.T.***

**BIG GAME IN THE NATIONAL PARKS—Dr. H. C. Bryant of the National Park Service.**

**In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.**

# •First Glances at New Books

Additional Reviews On Page 352

**Military Science**

IF WAR COMES—R. Ernest Dupuy and George Fielding Eliot—*Macmillan,* 369 p., illus., $3. Two American Army officers review the world situation today from the military viewpoint. The book is neither a prophecy nor a professional treatise but rather an attempt to review the progress of military art and scientific research, applied to war, and thus to determine what may be the character of a war—any war—in the immediate future. A very complete and well-written book which ends with gripping summaries of the leading military problems of the great nations.

*Science News Letter, November 27, 1937*

**Industry**

DIRECTORY OF MATERIALS (5th ed.)—*Machine Design, Cleveland,* 46 p., 25 c.

*Science News Letter, November 27, 1937*

**Geography**

ACTIVITIES IN GEOGRAPHY—George J. Miller, Ed.—*McKnight and McKnight,* 87 p., 96c. The authors make a laudable attempt to break away from "Nebraska is bounded by.....". Material for student activities, such as games, puzzles, pageants, contributed by over sixty teachers and students, are described.

*Science News Letter, November 27, 1937*

**Silviculture**

PRACTICAL TREE SURGERY—Millard F. Blair—*Christopher,* 297 p., illus., $4. The initial sixth of the book is given over to a condensed description of various tree and shrub types. Then follows, as the main body of the book, a series of chapters on tree pathology, arranged according to the trouble-making organisms. Finally, a group of chapters on tools, materials, and procedure.

*Science News Letter, November 27, 1937*

**Entomology**

THE HISTORICAL DEVELOPMENT OF INSECT CLASSIFICATION—H. F. Wilson and M. H. Doner—*Swift,* 133 p., $4.50. A planographed publication, for use chiefly by systematic entomologists. Of little interest, therefore, to the general public; but of considerable importance within the limits of its field.

*Science News Letter, November 27, 1937*

**Chemistry**

OUTLINES OF THEORETICAL CHEMISTRY (6th ed.)—Frederick H. Getman and Farrington Daniels—*Wiley,* 662 p., $3.75. A new edition of a well-known text in physical chemistry, dealing in as elementary a way as possible with a subject that is by no means elementary. This revision, prepared by Dr. Daniels alone, was sorely needed because of the sweeping changes in theoretical physics and chemistry since 1931, the date of the last edition.

*Science News Letter, November 27, 1937*

**Language**

INTERLINEAR GERMAN READER — Meno Spann—*Univ. of North Carolina,* 75 p., 40 c. Very simple German reading exercises in large print with lines spaced far apart, and in the spaces small-typed literal translation. With a guide of this kind, it is practically impossible not to learn even a reputedly "tough" foreign language.

*Science News Letter, November 27, 1937*

**Herpetology**

STRANGE REPTILES AND THEIR STORIES —A. Hyatt Verrill—*Page,* 195 p., illus., $2.50. Poisonous reptiles, friendly serpents, snake giants, living dragons, are a few of the many chapter titles that promise fascinating reading to the person interested (as we all should be) in this important division of the animal kingdom.

*Science News Letter, November 27, 1937*

**Chemistry**

QUALITATIVE ANALYSIS BY SPOT TESTS: Inorganic and Organic Applications—Fritz Feigl; Trans. by Janet W. Matthews—*Nordemann,* 400 p., $7. A manual on this relatively new rapid method of testing small amounts of material.

*Science News Letter, November 27, 1937*

**Criminology**

CRIME CONTROL BY THE NATIONAL GOVERNMENT—Arthur C. Millspaugh—*Brookings Institution,* 306 p., $2. An outside agency takes a look at a difficult administrative problem.

*Science News Letter, November 27, 1937*

**Geology**

OUTLINES OF HISTORICAL GEOLOGY (3rd ed.)—Charles Schuchert and Carl O. Dunbar—*Wiley,* 241 p., illus., $2.50. Revised, reillustrated, reindexed, this remains a standard work.

*Science News Letter, November 27, 1937*

**Economics**

EVERYDAY PROBLEMS IN ECONOMICS—Cornelius C. Janzen and Orlando W. Stevenson—*Silver Burdett,* 158 p., 60 c. A workbook for high school use.

*Science News Letter, November 27, 1937*

**Ornithology**

A PICTORIAL GUIDE TO THE FAMILIES OF BIRDS—Edward T. Boardman and Elizabeth Barto—*Cranbook Institute of Science,* 48 p., illus., 50 c. Although professedly limited to southeastern Michigan, this compact, neatly illustrated little bird book will be found useful well outside the limits it sets for itself.

*Science News Letter, November 27, 1937*

**Zoology, Juvenile**

FUZZY TAIL—Arensa Sondergaard—*Heath,* 134 p., 72 c. For children just learning to read, the story of a kitten in quite small words and nice big pictures.

*Science News Letter, November 27, 1937*

**Psychology**

THE INFLUENCE OF BARRIERS UPON STRENGTH OF MOTIVATION—Herbert Fletcher Wright—*Duke Univ.,* 143 p., $1.50.

*Science News Letter, November 27, 1937*

**Botany**

PLANT LIFE FORMS—C. Raunkiaer; trans. by H. Gilbert-Carter—*Oxford,* 104 p., $2. See page 348.

*Science News Letter, November 27, 1937*

**ELEMENTARY EXPERIMENTAL CHEMISTRY**

**By John C. Hogg and Charles L. Bickel**

This new laboratory manual of inorganic chemistry aims to develop the desire and aptitude for original investigation in the beginning student. The book has been three years in the making, and the experiments were subjected to severe testing in the authors' classes at Phillips Exeter Academy. A unique feature is that the pages are perforated and printed on only one side, to facilitate the transference of material from the manual to the student's note-book.

Pp. 186+118 blank
$2.00

**Oxford University Press**
**114 Fifth Avenue, New York**

# •First Glances at New Books

Additional Reviews On Page 351

**Ornithology**

THE BIRDS OF AMERICA—John James Audubon—*Macmillan,* 36 p., 500 colored plates, $12.50. All of the 435 plates of Audubon's original "elephant folio" with 65 additional paintings made at a later date, are here reproduced on pages approximately 8 x 12 inches in size. The color printing is exceedingly faithful to the originals. At the foot of each page are a few lines of text, and there is a vigorously written introduction by William Vogt. All round, the book is a sumptuous piece of work, and will certainly be eagerly bought by ornithologists, and naturalists and booklovers generally, who have long desired Audubon plates but who could not have them because of the exceedingly limited supply and the consequently prohibitive prices. See page 347.

*Science News Letter, November 27, 1937*

**Entomology**

GRASSROOT JUNGLES: A BOOK OF INSECTS—Edwin Way Teale—*Dodd Mead,* 233 p., illus., $3.75. A lot of really remarkable insect pictures serve as framework for chapters that tell about them, straightforwardly, vividly, in simple language yet with adequate presentation of fact. A very good book for a Christmas present to an entomologically-inclined friend.

*Science News Letter, November 27, 1937*

**Bacteriology**

MUIR'S BACTERIOLOGICAL ATLAS (2d ed.)—C. E. van Rooyen—*William Wood,* 90 p., colored plates, $5.25. Eighty-three carefully drawn plates, from actual bacteriological preparations, colored accurately according to their appearance in stained slides, illustrate the principal genera of pathogenic bacteria. Each illustration is accompanied by concise text. This is a most useful book for both laboratory scientist and practising physician.

*Science News Letter, November 27, 1937*

**Anthropology**

THE RACES OF MANKIND. SCULPTURES BY MALVINA HOFFMAN (3rd ed.)—Henry Field—*Field Museum,* 44 p., illus., 25 c.

*Science News Letter, November 27, 1937*

**Paleontology**

THE EARTH CHANGES—Jannette May Lucas and Helene Carter—*Lippincott,* 88 p., illus., $2.50. Geology books for the out-of-classroom reader, particularly the younger generation, multiply most satisfactorily. Here is another one that is more than just "another" one. It is carefully thought out and clearly stated. An especially noteworthy feature are the large, rather impressionistic maps that show where ancient seas and land masses lay, as compared with those of the present time.

*Science News Letter, November 27, 1937*

**History**

THE ROMANCE OF EXPLORATION—Karl Sundheim—*Hillman-Curl,* 568 p., $1.50. A history of man's discoveries and adventuring, from days of the flood to exploits of modern expeditions, told for the reader who wants details, rather than a rapid summary. Numerous illustrations are included.

*Science News Letter, November 27, 1937*

**Anthropology**

AFRICAN GENESIS—Leo Frobenius and Douglas C. Fox—*Stackpole,* 236 p., illus., $3. A German professor noted for his studies of African rock pictures, here tells some vivid African legends and fables which he learned from natives. In an introductory chapter, he discusses cultural backgrounds involved in the tales, and shows how the stories help to interpret rock paintings.

*Science News Letter, November 27, 1937*

**Travel, Juvenile**

CHINA QUEST—Elizabeth Foreman Lewis—*John C. Winston,* 301 p., illus., $2. An exciting adventure tale for boys and girls, with a Chinese boy and an American boy for central characters. Since the scene shifts from America to Shanghai, there is much local color of China in the story. Mrs. Lewis writes well, and Kurt Wiese provides numerous illustrations of actual incidents in the tale.

*Science News Letter, November 27, 1937*

**Carpentry**

THE VILLAGE CARPENTER—Walter Rose—*Cambridge (Macmillan),* 146 p. illus., $2.50. An appreciatively reminiscent biography of a carpenter of the old school, who made everything from cogwheels to coffins, told in charmingly discursive style, and illustrated with excellently composed photographs of both the tools and the things that were wrought with them.

*Science News Letter, November 27, 1937*

**Agriculture**

CHEMICAL WEED KILLERS. A REVIEW PREPARED FOR THE ASSOCIATE COMMITTEE ON WEED CONTROL—W. H. Cook and A. C. Haferdahl—*National Research Council of Canada, Ottawa, Canada,* 111 p., 25c.

*Science News Letter, November 27, 1937*

**Physics**

THESE AMAZING ELECTRONS—Raymond F. Yates—*Macmillan,* 326 p., illus., $3.75. Here, in layman's language, is the story of the fundamental bits of all matter known as electrons. Not only is the science of electronics—those varied applications which have produced radio, television, photoelectric cells and a host of other tools—discussed, but because electrons are fundamental the author discusses radiation, atom smashing, radio-activity, cosmic rays and indeed the whole gamut of atomic structure, modern physics and its applications.

*Science News Letter, November 27, 1937*

**Aeronautics—Juvenile**

EVERY BOY'S BOOK OF AIRCRAFT—Eric Sargent—*Appleton-Century,* 103 p., illus., $1.50. EVERY BOY'S BOOK OF FIGHTING PLANES—David W. Tyrrell—*Appleton-Century,* 96 p., illus., $1.50. Illustrated books of British origin, on the various types of aircraft.

*Science News Letter, November 27, 1937*

**Psychology**

THE EFFECT OF VOLUNTARY ACTIVITY ON THE KNEE-JERK—Sarah C. Dunlap—*Johns Hopkins,* 62 p., $1.25. It appears that the knee-jerk is not the simple reflex it has been thought, and it can be modified voluntarily by practice.

*Science News Letter, November 27, 1937*

**Chemistry**

POISON IN THE AIR—Heinz Liepmann—*Lippincott,* 308 p., $2.50. Written in a spirit of excitement, even hysteria, this book pictures possible chemical warfare of the future in most lurid colors. Yet who can declare categorically that the author's frenzy is not justified?

*Science News Letter, November 27, 1937*

**Malacology**

EAST COAST MARINE SHELLS—Maxwell Smith—*Edwards,* 308 p., $4.50. A multilithed book, with abundant illustrations quite adequate for its purpose, that will be welcomed by malacologists both professional and amateur.

*Science News Letter, November 27, 1937*

**Education**

VARIABILITY IN RESULTS FROM NEW-TYPE ACHIEVEMENT TESTS—Earl V. Pullias—*Duke Univ.,* 100 p., $1.

*Science News Letter, November 27, 1937*

**Comparative Psychology**

FOOD-TOKENS AS INCENTIVES FOR LEARNING BY CHIMPANZEES—John T. Cowles—*Johns Hopkins,* 96 p., $1.50.

*Science News Letter, November 27, 1937*